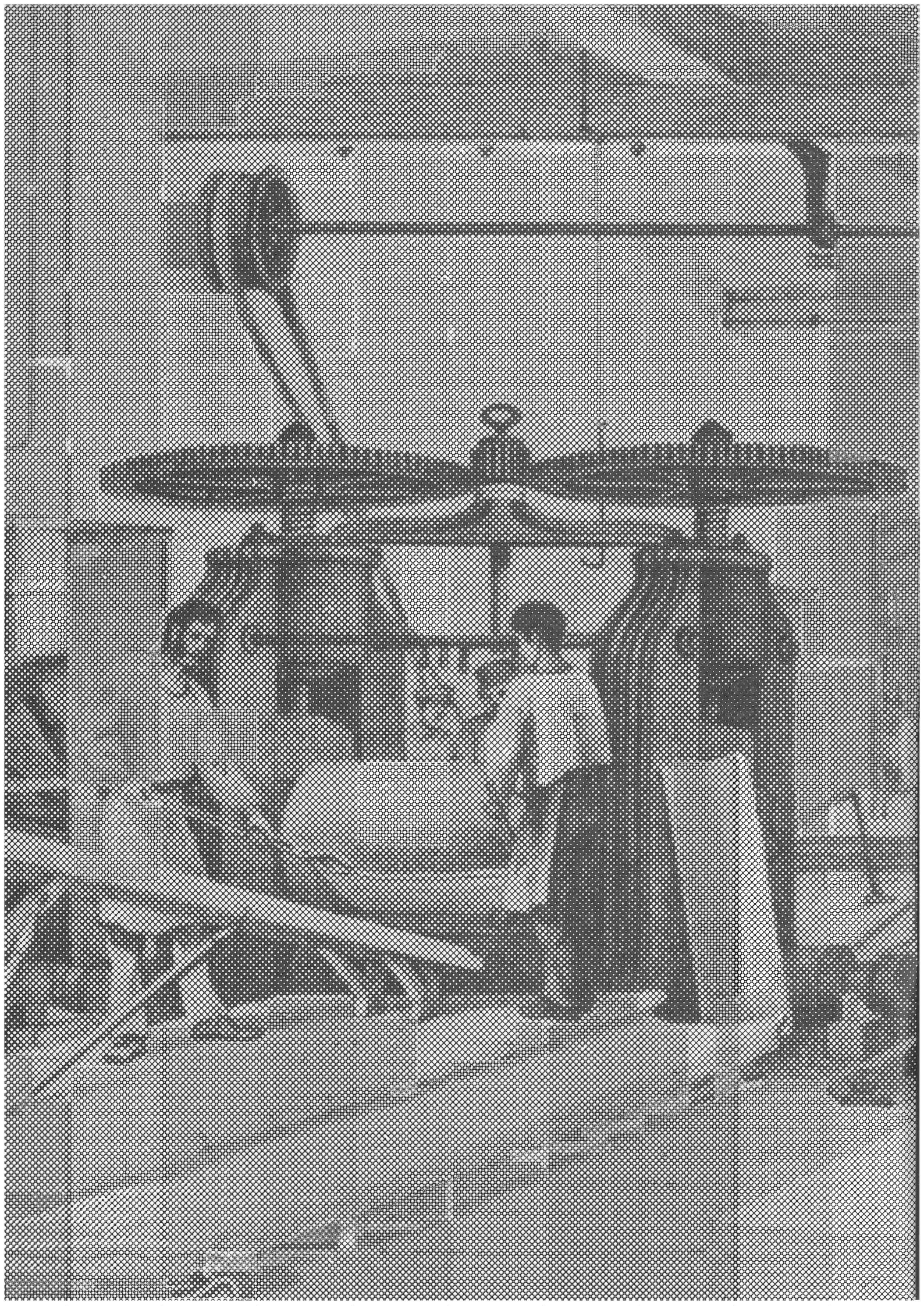
VIEILLE-MONTAGNE



VIEILLE-MONTAGNE'S ORIGIN

Vieille-Montagne originated from an ancient zinc mine in a village called La Calamine, situated between Liège and Aachen.

Exploited since the Middle Ages, this deposit provided for several centuries the calamine necessary for producing the raw brass used by coppersmiths (or brass beaters) in the Meuse Valley and Aachen areas.

At the beginning of the 19th century this undertaking reached an industrial scale under the management of Abbé Dony. This chemist from Liège was granted the Vieille-Montagne mining concession by Napoleon I and discovered the so-called Liège process of producing metallic zinc by carbon reduction of oxidized ore in heated retorts. This process was undeniably the outset of the world-wide development of zinc.

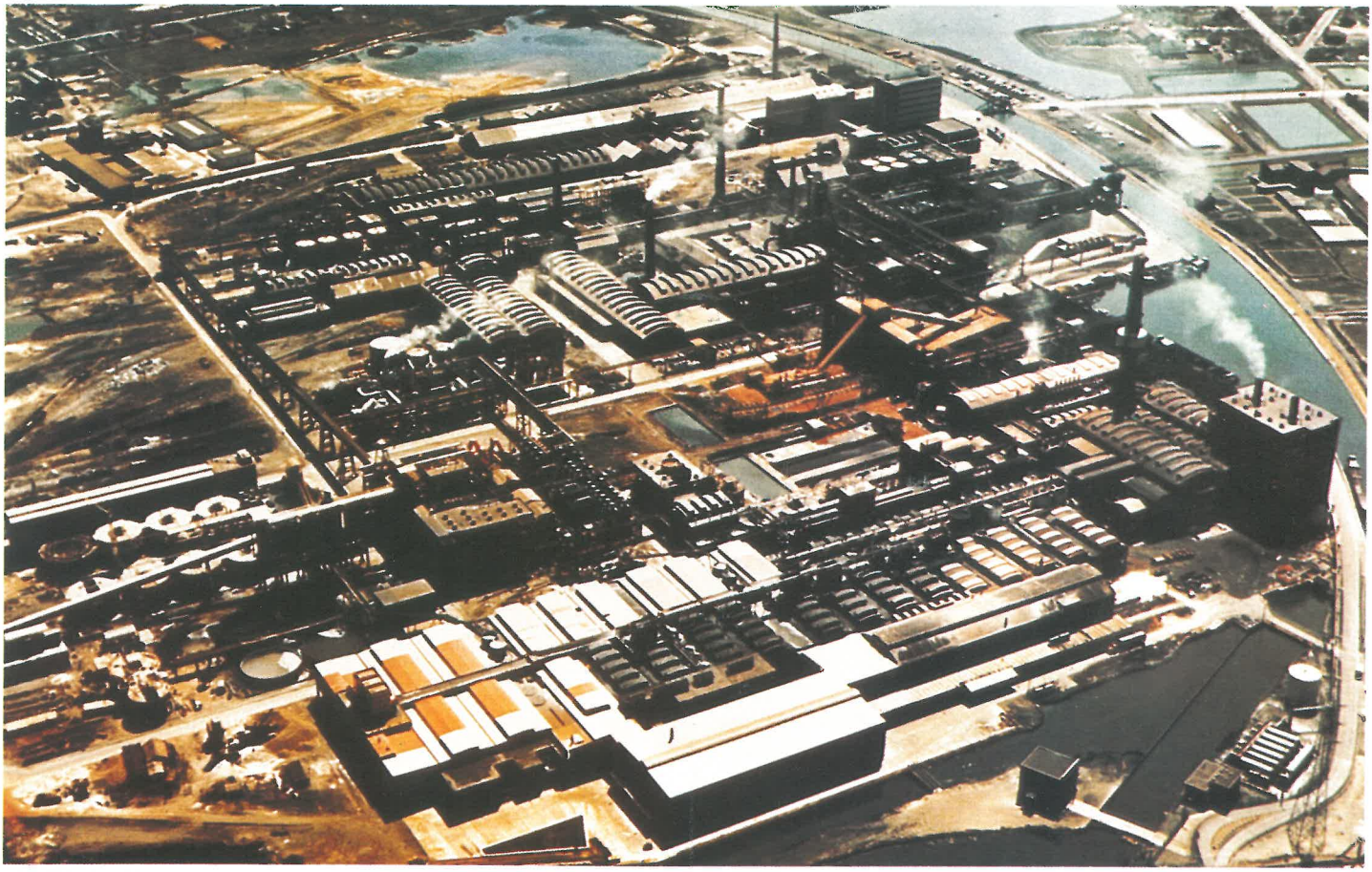
In 1837 the Mosselman family, who in 1813 acquired the Liège zinc plant as well as the Calamine mining concession, transformed the undertaking, with the Banque de Belgique's cooperation, into a limited company known under its present name Société des Mines et Fonderies de Zinc de la Vieille-Montagne.

In the course of time Vieille-Montagne acquired an international figure due to the development of its mining and metallurgical activities in France, Germany, Sweden, North Africa and, at times, in other European countries.

Leader of the zinc industry in Europe as from the 19th century, Vieille-Montagne since then has been devoting a major part of its activities to the research and promotion of new uses for zinc and its by-products.

Zinc rolling at Angleur plant around 1850 (drawn from nature and lithography by A. MAUGENDRE).

Balen site.



Viviez site.

ORGANISATION - STRUCTURE OF VIEILLE-MONTAGNE GROUP

The organization is based on a large decentralization with delegation of power co-ordinated by the General Management of the company, the head office of which has been established from the very beginning in Angleur near Liège (Belgium). The industrial structure includes :

IN BELGIUM

Four plants:

BALEN (Province of Antwerp): mainly, an electrolytic zinc plant integrated with a complex group of by-products: lead, cadmium, silver, bismuth, mercury, lead semis, solders, thallium and thallous salts, single crystal and polycrystalline silicon, high purity metals. Ore roasting and sulphuric acid production units.

FLONE (Province of Liège): specializing in direct zinc dust and thermic zinc ingots production.

ANGLEUR (Liège): manufacture of photoengraving zinc plates, zinc die casting alloys. Zinc wire and wrought zinc products. Production unit of extra pure magnesium oxide and carbonate.

GRACE-HOLLOGNE (Province of Liège): zinc oxide and zinc dust.

IN GERMANY

AG. des Altenbergs für Bergbau und Zinkhüttenbetrieb, (100% owned subsidiary): two plants and a mining exploitation in North Rhine-Westphalia:

OBERHAUSEN die casting zinc alloys, zinc plates for cathodic protection and for photoengraving, wrought products for building applications.

ESSEN-BERGEBORBECK: manufacture of steel gratings and assembly of electronic regulation cabinets.

BENSBERG: zinc and lead mining exploitation.

IN SWEDEN

ÅMMEBERG (Province of Örebro): zinc and lead mining exploitation, the extraction capacities of which are being presently increased.

IN FRANCE

Dependent on the French section Management in Paris, four plants:

VIVIEZ (Aveyron): in Viviez Vieille-Montagne established the first European electrolytic zinc factory (1921-1925). In addition to the electrolytic plant the Viviez complex includes ore roasting with production of sulphuric acid, manufacturing units of zinc sulphate, cadmium, lead silicochromate, die casting alloys, sacrificial zinc anodes, calots for dry cells and an ultra-modern rolling-mill with a continuous casting capacity of 50.000 tpa, as well as a wrought zinc products unit.

CREIL (Oise): zinc oxide and zinc dust.

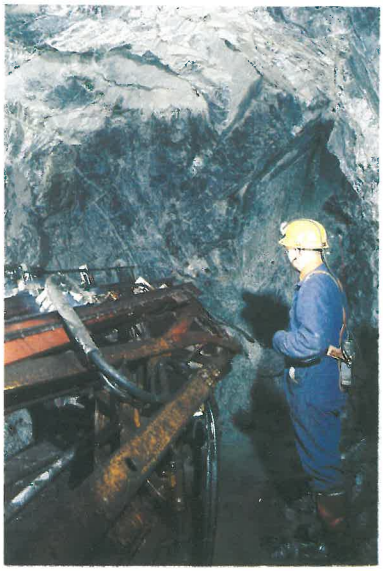
BRAY (Val-d'Oise): wrought zinc products for building purposes as well as industrial semi-products and zinc sheets. Zinc wire for metal spraying. Zinc plates for cathodic protection.

CALAIS (Pas-de-Calais): ore roasting and sulphuric acid production.

And a subsidiary company:

VIVIEZ (Aveyron) the Société des Produits Chimiques de Viviez manufactures barium sulphide and lithopone, extracts barite in its Lacan mine.

Åmmeberg's Mine.
LHD loader and jumbo for extraction.



PRODUCTION AND CAPACITY

Vieille-Montagne's activities cover all mining and metallurgical aspects of the zinc industry and its by-products:

- ore extraction and concentration
- desulphurization of zinc concentrates by roasting
- treatment of zinc-bearing residues and by-products
- production of electrolytic zinc
- production of secondary metals: cadmium, silver, bismuth, mercury, thallium
- production of zinc ingots, dusts, powders and oxides by thermic processes
- manufacture of zinc alloys
- rolled zinc sheets and strips
- wrought zinc products for the building industry
- semi-product for industrial uses: sheets, tubes, rods, wires for spraying and other uses, calots for dry cells, plates for graphic arts, anodes for electroplating and cathodic protection
- in addition, wrought lead and solders
- high purity metals
- magnesium oxide and carbonate.

Vieille-Montagne has been among the first to adopt the electrolytic process, the only one leading to direct production of special high grade zinc (99,995+%).

The consolidated main production capacities of Vieille-Montagne are as follows:

• Zinc metal:	360,000 tons
of which:	
– Electrolytic zinc ingots:	290,000 tons
– Thermic zinc (ingots or dust):	70,000 tons
• Wrought zinc:	80,000 tons
• Zinc alloys:	35,000 tons
• Zinc oxide:	40,000 tons
• Sulphuric acid	610,000 tons
• Cadmium	1,000 tons

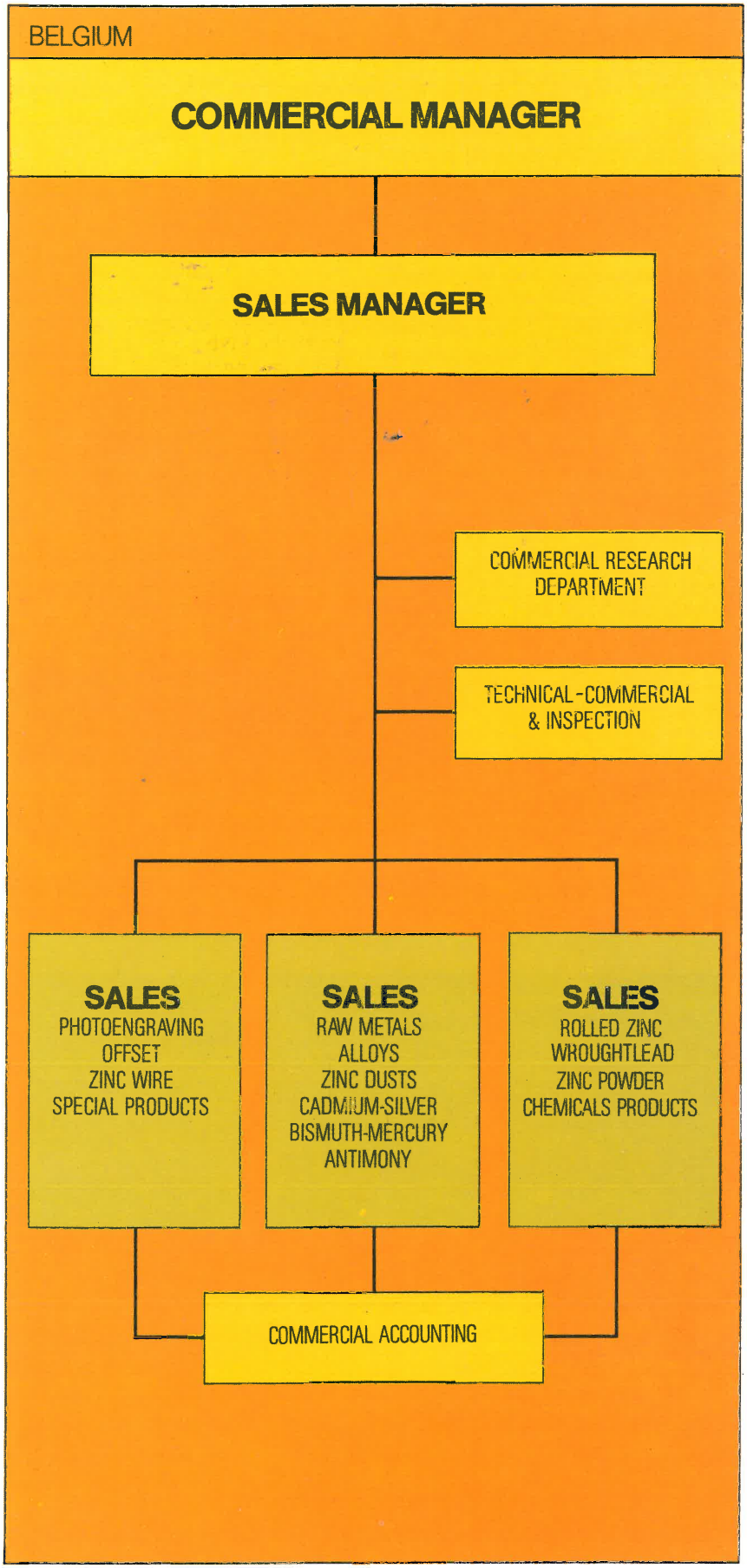
COMMERCIAL STRUCTURE AND ACTIVITY

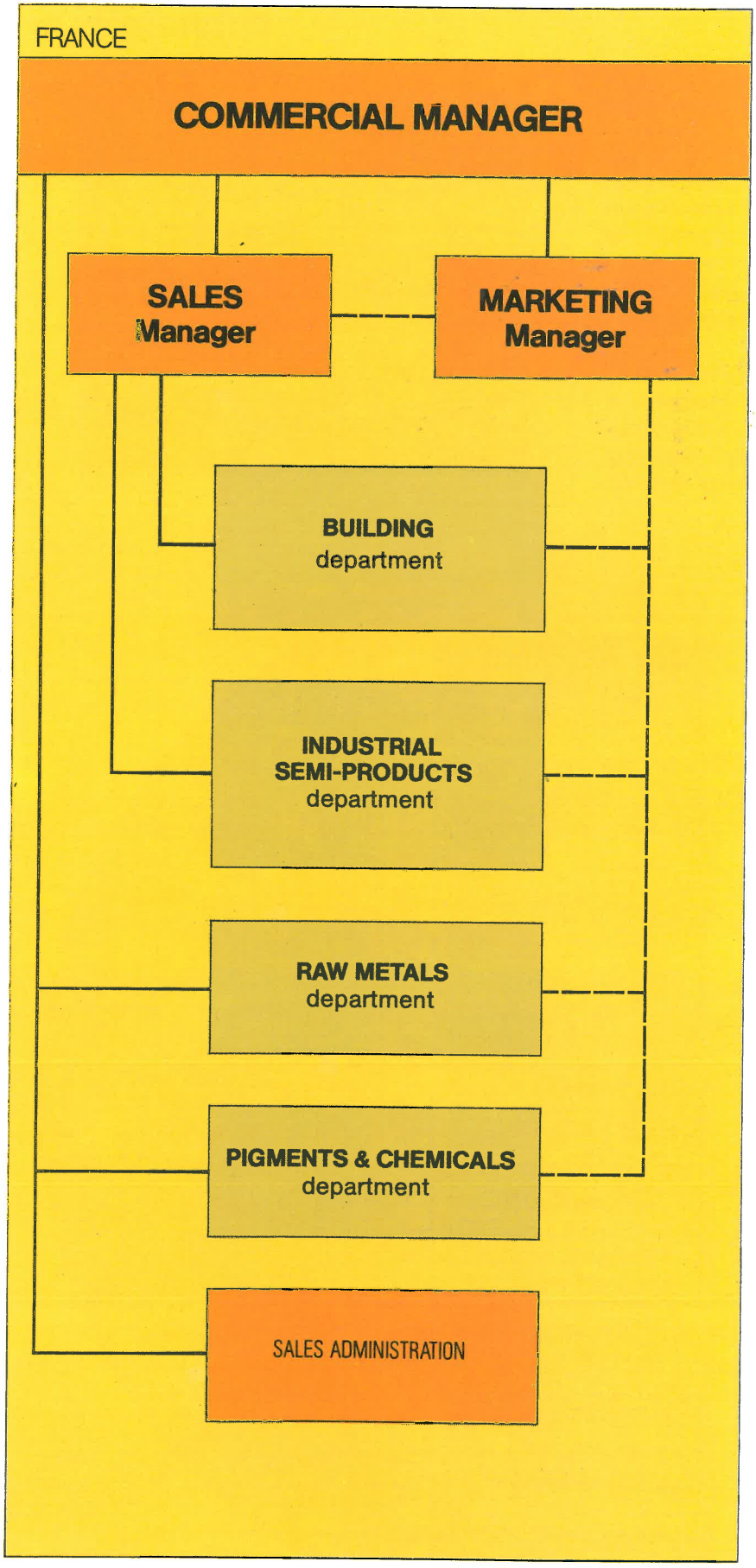
Two commercial Managements have their respective function in Belgium and in France. The Belgian section exports 2/3 of its production whereas the French section operates mainly on its home market.

The close product-market connexion reflects in the commercial orientation as well as in the existing functional and operational organization.

One of the essential conditions is a thorough knowledge of the present and potential requirements the industry and end-users have as well as of the specific value of the products. The market-product analysis entrusted to the economical and marketing research departments helps defining and preparing the commercial strategies to be set up in line with the company's objectives and, in cooperation with research and development, the long-run orientation of the company.

A point to be stressed is the permanent attention to customers' service, one of the company's major concerns which, at all times, has contributed to its prominent image.





THE COMMERCIAL ACTIVITIES BRANCHES

There are six main products lines to which correspond departments with complete technical and commercial structures.

Each of them operates either a range of similar products or a specific market, each of them requiring particular organization and approach.

Thus, apart from the mining exploitation, the following activities are distinguished:

- Raw metals
- Pigments and chemicals
- Building industry
- Industrial semi-products
- High purity metals and special products
- Engineering.

Raw metals

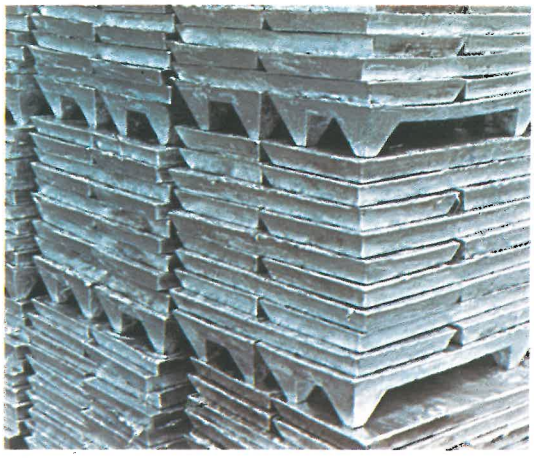
Two thirds of the non-ferrous metals commercialized by the company are in ingot form.

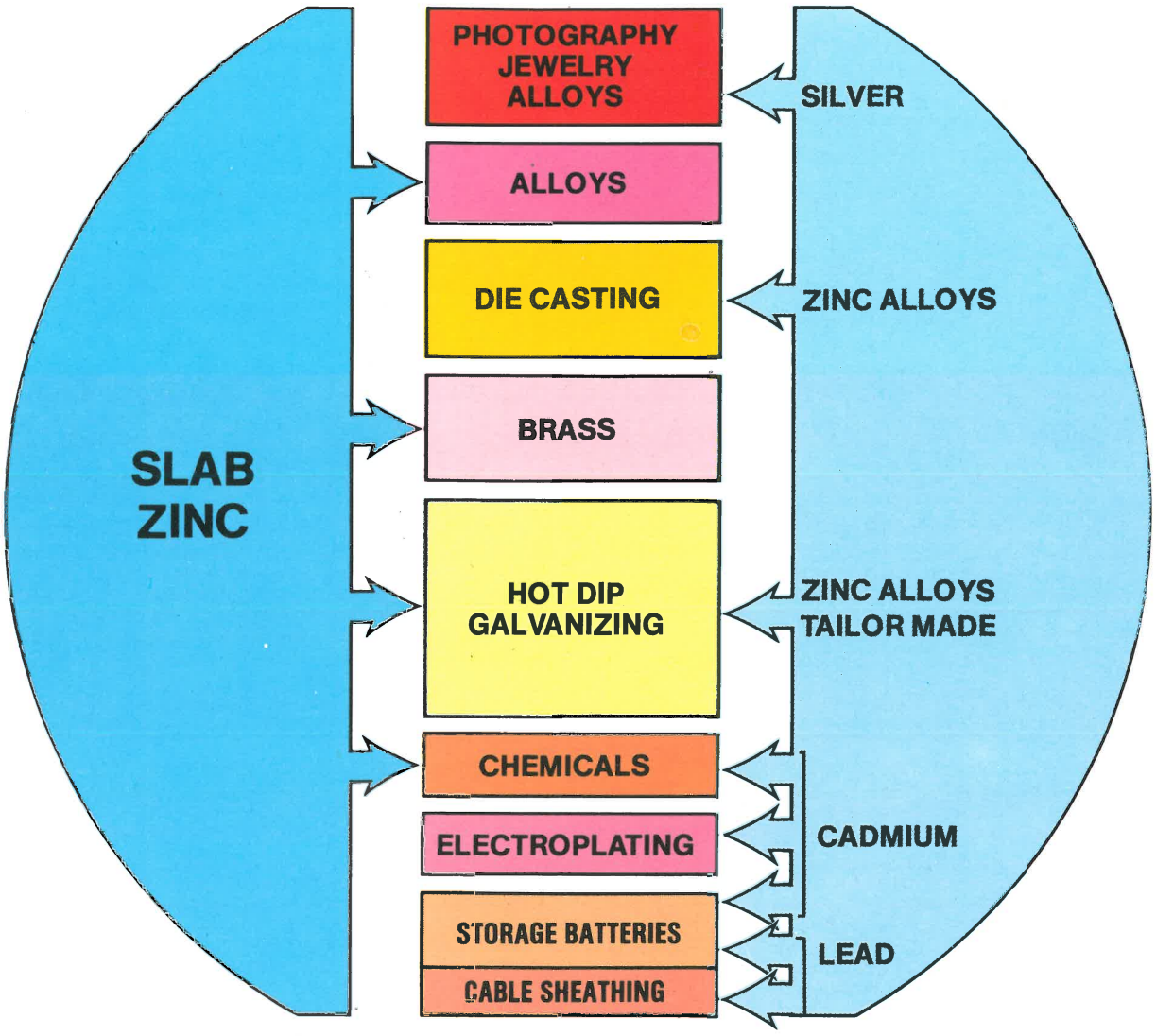
They are pure metals (electrolytic zinc 99,95% to 99,995%, lead 99,97%, cadmium 99,98%), casting alloys, tailor made galvanizing alloys or special alloys used as additives, especially in galvanizing.

Galvanization is meant for anti-corrosion protection of steel sheets, tubes, wires, profiles and structures.

Die casting alloys (Zamak or Zincuial) are used for the manufacture of a large number of usual components, particularly in the automobile industry, domestic appliances, hardware for the building industry, tools, jewelry, toys, etc.

Zinc ingots of 25 kg.





Pigments and chemicals

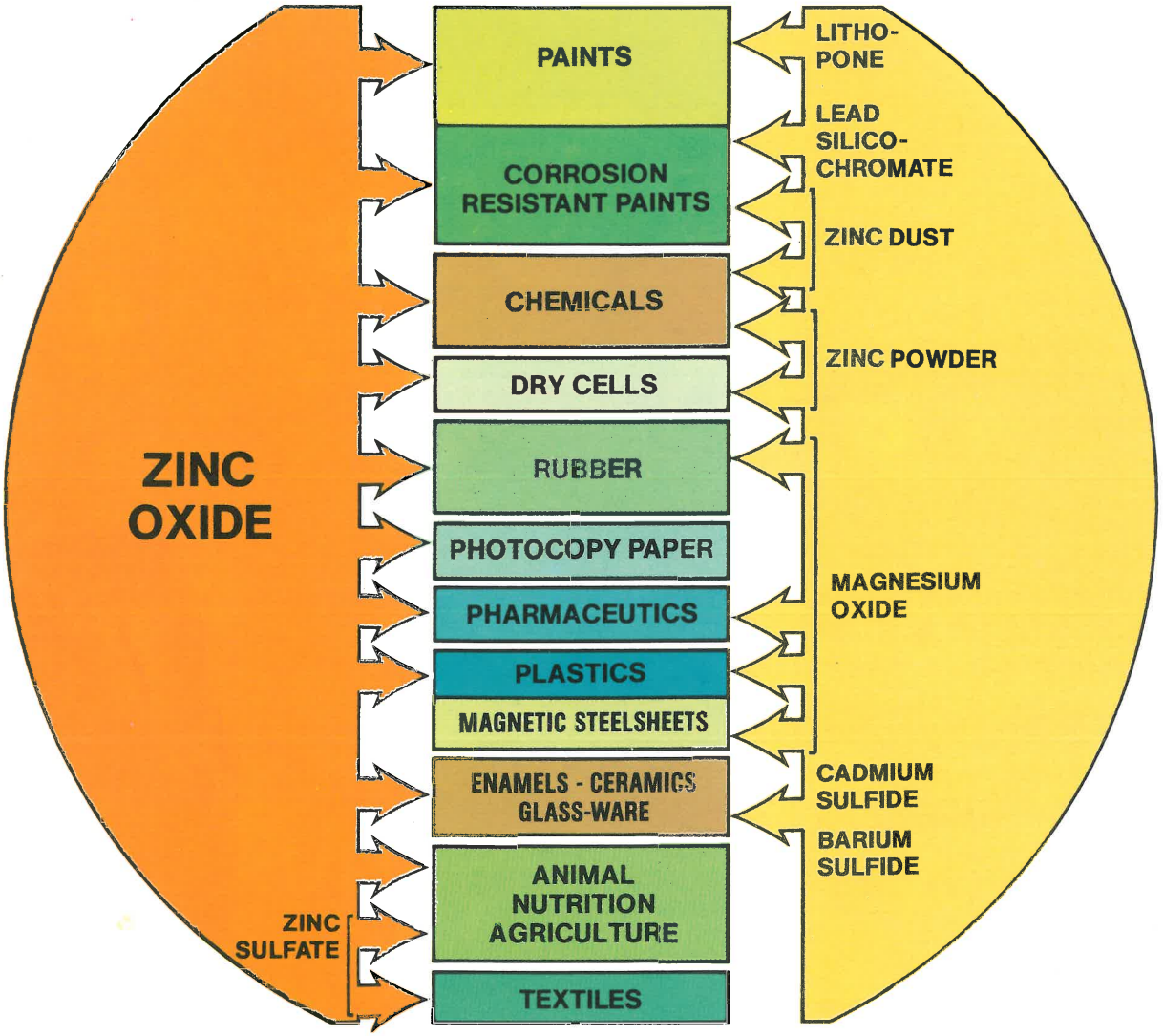
Originally intended for zinc oxide supply to the paint industry as a non toxic pigment, then to the rubber industry as an activator, this department met a double mutation.

The first is based on the richness of physico-chemical properties on a par with the zinc oxide elementary structure: anti-UV characteristics used in plastics and paints, and more recently, its photo-conductive properties which led to coating reprography paper.

The second evolution corresponds to the rationalization and the additional supplies to markets already acquired to zinciferous or associated products developed through research:

- Zinc sulphate for cattle feed and agriculture
- Zinc dust and lead silicochromate for corrosion resistant paints, lithopone for brilliant white paints
- Zinc powder for the chemical industry and electric cells
- Magnesium oxide for pharmacy, rubber, polyesters and coating of magnetic sheets
- Cadmium sulphide for glass works.

Finally, mention should be made of the supplies of basic raw materials to the chromate, phosphate, stearate and lubricant industries.



Building industry

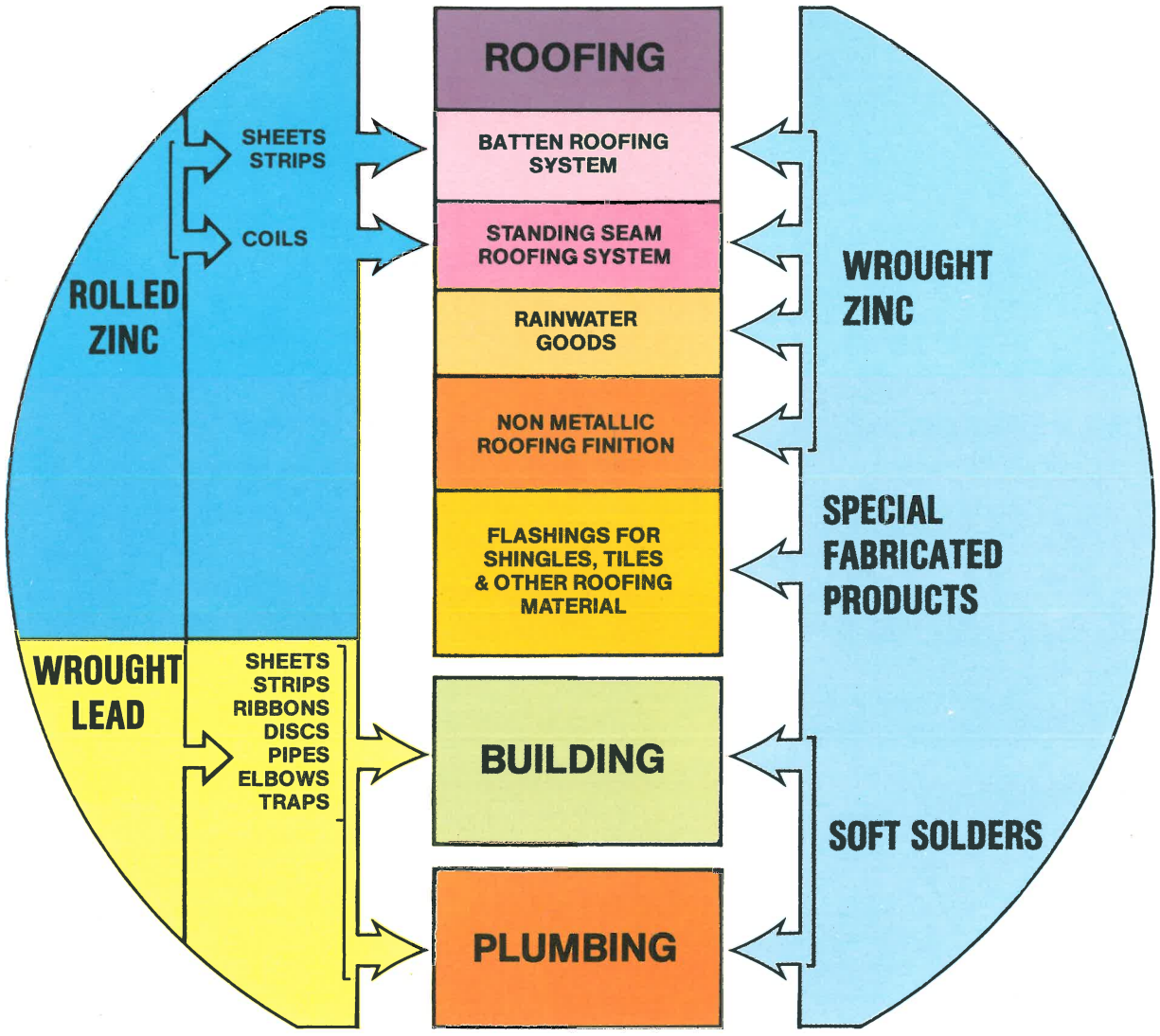
From the very origin, zinc rolling was one of Vieille-Montagne's main activities.

Vieille-Montagne was the first company to produce wide strips as from 1962 and actively contributed to the evolution of the metal roofing, particularly the long strip and the standing seam techniques, the manufacture of wrought products, gutters and pipes in long section.

Always searching for new solutions, the roofing department pursues the development of special zinc accessories adapted to different types of roofs. Besides, such accessories, made to ensure not only watertightness but also an impeccable finish, offer the advantage of speedier application and greater security.

The products for this industry are traded throught consignees, distributors or general merchants.

Prepatined zinc roof, standing seam technique (arch. B. ALBERT).



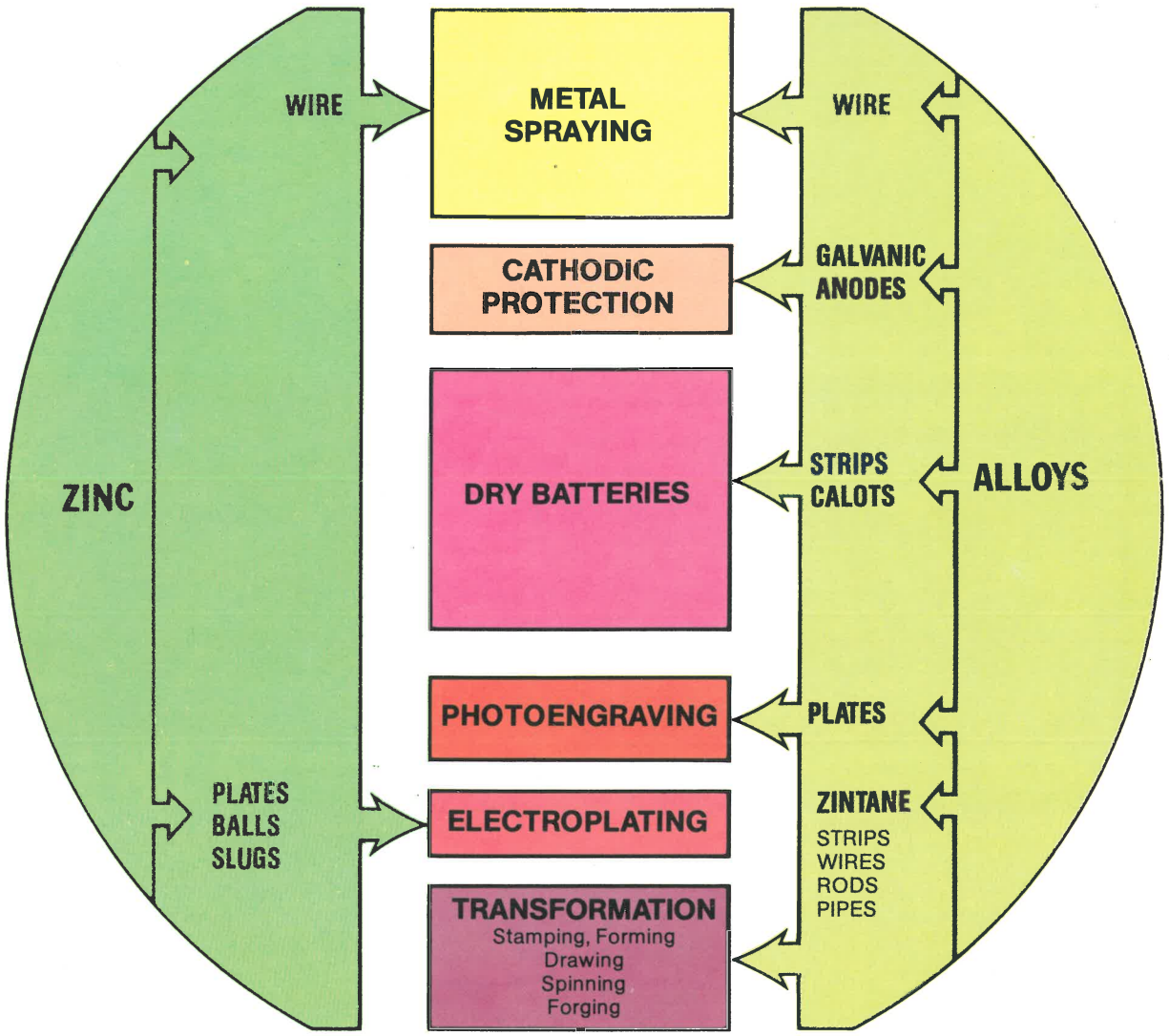
Industrial semi-products

This activity is either directed towards the anti-corrosion protection of steel by elaborated techniques other than galvanizing, or issued from zinc physico-chemical properties as in the case of the battery or photo-engraving industries. The third and last market covered by the transformation industry converts wires and sheets made of zinc alloys such as Zintane, in various operations: cutting, forming, forging, drawing, etc.

Anodes for cathodic protection are devised for submerged steel structures such as ships and off-shore platforms, or burried one such as tanks and pipe-lines.

For photo-engraving, the zinc plates are sold ready for use and presensitized upon request.

Zinc spraid structure, POMPIDOU Museum, Paris.
(Photo S.N.M. - Villeneuve-le-Roi).



Special products

Vieille-Montagne has elaborated refining methods which enable them to offer metals with purity levels reaching 99,999% and 99,9999% for the needs of scientific research or for various special applications.

They are mainly: zinc, lead, cadmium, mercury, bismuth, indium, arsenic metal, thallium and various salts of these metals.

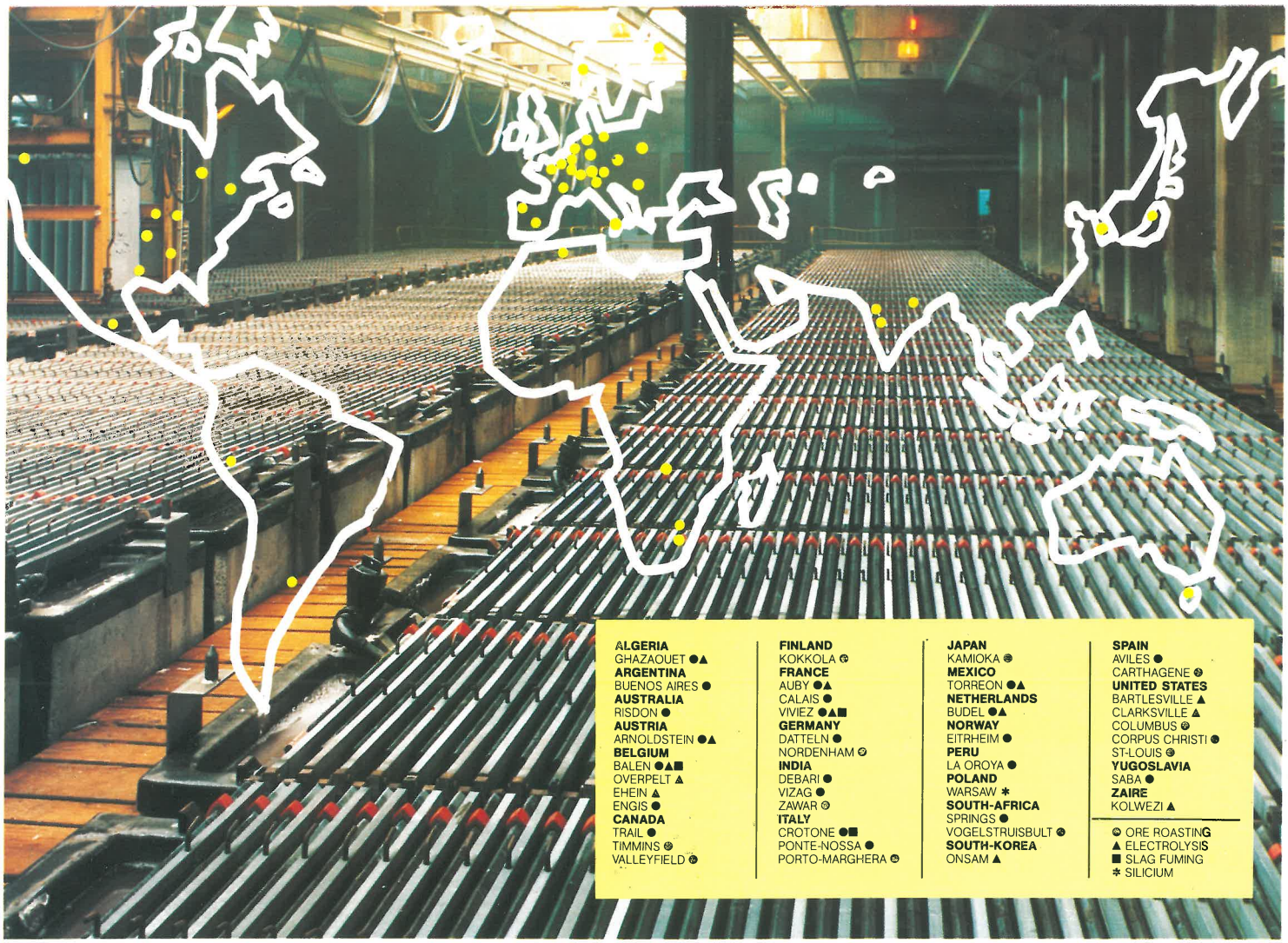
For several years Vieille-Montagne has also produced the electronic quality silicon intended for the elaboration of semi-conductor components such as diodes, transistors, thyristors, integrated circuits, etc.

Engineering

Due to its technological advance the company has been in a position to valorize the metallurgical techniques developed in its plants.

As a result and since 1961, more than 60 industrial installations using the Vieille-Montagne processes have been erected all over the world.

Fields in which Vieille-Montagne is ahead of progress are blende fluid bed roasting as well as zinc production electrolytical techniques from sulfide or non sulfide ore.



Industrial installations using Vieille-Montagne's know how (in the background, automated electrolytic tank room).

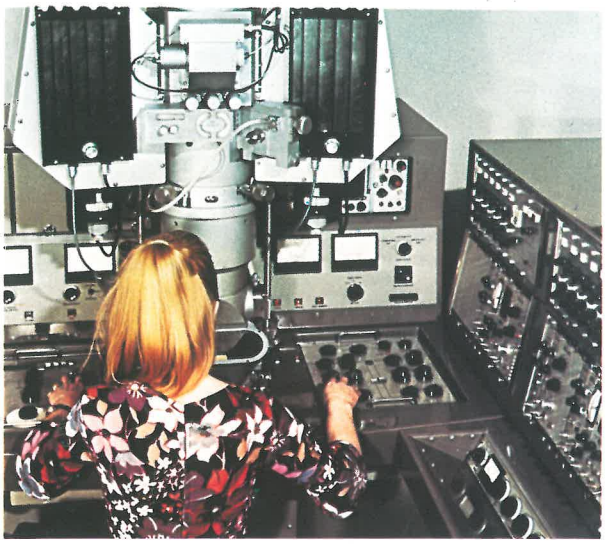
FUTURE OF THE COMPANY

Its human potential, technology, research programmes, the high rate of investments maintained and its commercial dynamism, are the guarantees of Vieille-Montagne's expansion.

With an average personnel of 5.000 people, the turnover of the last few years has exceeded the ten thousand million Belgian francs bracket.

To remain at the peak of progress in its industrial activities, Vieille-Montagne follows up an intensified and diversified research policy, economical as well as technical, fundamental as well as industrial.

Electron microscope.



Calais ore roasting unit (150.000 tpy capacity).

Viviez rolling mill with continuous casting (50.000 tpy capacity).

With up-to-date equipment and highly qualified chemists, its laboratories are constantly searching for more elaborated products which lead to new activities or innovations, some of which being likely to favour product. market diversifications.

Besides a continuous modernization effort, the most outstanding investments during the past few years include in particular a new rolling-mill complex in Viviez (1971), a roasting plant in Calais (1975) and the extension of the mining exploitation in Sweden (1976). This effort, strengthened by an investment expenditure exceeding three thousand million Belgian francs over a 3-year period reflects the company's will to maintain its position among the most important zinc producers in the world.

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